

IN THE CLAIMS:

Claims 1 and 34 are requested to be amended as follows:

1. (Currently Amended) An apparatus for dispensing a medication fluid comprising:  
a reservoir adapted to contain the fluid and adapted for use with a drive system having a  
threaded linear actuation member; and  
a piston comprising:  
a first member adapted to be slidably mounted within the reservoir and adapted to  
form a fluid-tight barrier within the reservoir;  
the first member having an external proximate side and an external distal side, the  
external proximate side being adapted to contact the fluid and being made  
of a material having a first stiffness, the external distal side ~~being~~  
including threads adapted to releasably engage the threaded linear  
actuation member;  
a second member having a first side and a second side, the first side and the  
second side of the second member being entirely contained within the first  
member and being adapted not to contact the fluid; and  
the first side of the second member being adjacent to the external proximate side  
of the first member and being made of a material having a stiffness which  
is greater than the first stiffness.
2. (Previously Presented) The apparatus of claim 1 wherein the first side of the  
second member is in a generally parallel, spaced-apart relationship with the external proximate  
side of the first member.
3. (Original) The apparatus of claim 1 wherein the material of the first member  
external proximate side has a thickness defined by the distance between the first member external  
proximate side and the second member first side, and wherein the thickness is generally uniform.

4. (Original) The apparatus of claim 1 wherein the first member external proximate side is made of an elastomeric material and the second member first side is made of one of stainless steel and plastic.

5-6. (Canceled)

7. (Original) The apparatus of claim 1 wherein the second member has a generally incompressible structure.

8. (Original) The apparatus of claim 1 wherein the first member has a cavity and the external distal side of the first member has an opening leading into the cavity, the cavity having an internal proximate wall and an internal side wall, the internal proximate wall being adjacent to the external proximate side.

9. (Original) The apparatus of claim 8 wherein the internal proximate wall of the cavity and the external proximate side are in a generally parallel spaced-apart relationship.

10. (Original) The apparatus of claim 8 wherein the material of the first member external proximate side has a thickness defined by the distance between the external proximate side and the internal proximate wall of the cavity, and wherein the thickness is generally uniform.

11. (Original) The apparatus of claim 1 wherein the first member has a cavity and wherein the external distal side of the first member has an opening leading into the cavity, the cavity comprising:

a first chamber extending from the external distal side into the cavity; and  
a second chamber extending from the first chamber to an internal proximate wall,  
the internal proximate wall being disposed adjacent to the external  
proximate side;  
and wherein the second member is disposed within the second chamber.

12. (Original) The apparatus of claim 11 wherein the first chamber is defined by a generally cylindrically-shaped first wall extending axially from the external distal side into the cavity, and wherein the second chamber is defined by:

a generally cylindrically-shaped second wall extending axially from the generally cylindrically-shaped first wall into the cavity, the generally cylindrically-shaped second wall having a radius which is greater than that of the generally cylindrically-shaped first wall;

a ledge extending from the generally cylindrically-shaped first wall to the generally cylindrically-shaped second wall; and  
the internal proximate wall.

13. (Original) The apparatus of claim 12 wherein the internal proximate wall of the second chamber and the first member external proximate side are in a generally parallel spaced-apart relationship.

14. (Original) The apparatus of claim 13 wherein the internal proximate wall has a generally conical shape and the external proximate side has a generally conical shape.

15. (Original) The apparatus of claim 14 wherein the second member has a generally conical face, a generally cylindrical side wall and a planar back wall, the generally conical face being adapted to mate with the internal proximate wall and the second member being adapted to seat against the ledge.

16. (Original) The apparatus of claim 14 wherein the second member has a conical face portion which terminates in a spherically-shaped end portion.

17. (Original) The apparatus of claim 15 wherein the first member is made of an elastomeric material and the second member is made of one of stainless steel and plastic.

18. (Previously Presented) An apparatus for dispensing a medication fluid comprising:

- a reservoir adapted to contain the fluid and adapted for use with a drive system having a threaded linear actuation member; and
- a piston comprising:
  - a first member adapted to be slidably mounted within the reservoir and adapted to form at least part of a fluid-tight barrier within the reservoir;
  - the first member having an external proximate side and an external distal side, the external proximate side being adapted to contact the fluid and being made of a material having a first stiffness;
  - wherein the first member has a cavity and wherein the external distal side of the first member has an opening leading into the cavity, the cavity comprising:
    - a first chamber extending from the external distal side into the cavity; and
    - a second chamber extending from the first chamber to an internal proximate wall, the internal proximate wall being disposed adjacent to the external proximate side;
  - wherein the first chamber is defined by a generally cylindrically-shaped first wall extending axially from the external distal side into the cavity, and the generally cylindrically shaped first wall has threads adapted to releasably engage the threaded linear actuation member; and
  - wherein the second chamber is defined by:
    - a generally cylindrically-shaped second wall extending axially from the generally cylindrically-shaped first wall into the cavity, the generally cylindrically-shaped second wall having a radius which is greater than that of the generally cylindrically-shaped first wall;

a ledge extending from the generally cylindrically-shaped  
first wall to the generally cylindrically-shaped  
second wall; and  
the internal proximate wall; and  
a second member having a first side and a second side, at least a portion of the  
second member being disposed within the first member;  
the first side of the second member being adjacent to the external proximate side  
of the first member and being made of a material having a stiffness which  
is greater than the first stiffness;  
wherein the second member is disposed within the second chamber.

19. (Original) The apparatus of claim 18 wherein the threads have a 2 start, 40 thread  
per inch pitch.

20. (Canceled)

21. (Previously Presented) An apparatus for dispensing a medication fluid comprising:

- a reservoir adapted to contain the fluid;
- a piston comprising:
  - a first member adapted to be slidably mounted within the reservoir and adapted to form at least part of a fluid-tight barrier within the reservoir;
  - the first member having an external proximate side and an external distal side, the external proximate side being adapted to contact the fluid and being made of a material having a first stiffness; and
  - a second member having a first side and a second side, at least a portion of the second member being disposed within the first member;
  - the first side of the second member being adjacent to the external proximate side of the first member and being made of a material having a stiffness which is greater than the first stiffness; and
- a drive system including a linear actuation member, wherein the piston first member is adapted to be releasably coupled to the linear actuation member, and further wherein the linear actuation member includes a first threaded member and the piston first member includes a second threaded member adapted to engage the first threaded member.

22. (Original) The apparatus of claim 21 wherein the first threaded member comprises a screw extending from the linear actuation member and having external threads, and the second threaded member comprises a cavity defined by the first member and having internal threads positioned to be engaged by the screw external threads.

23. (Original) The apparatus of claim 22 wherein the external threads of the screw are made of a material having a first hardness and the internal threads of the first member cavity are made of a material having a second hardness.

24. (Original) The apparatus of claim 22 wherein the external threads of the screw have a first lead and wherein the internal threads of the first member cavity have a second lead.

25. (Withdrawn) A method for dispensing fluid from a fluid reservoir having a piston which defines an axis of travel, the method comprising:

coupling the reservoir piston to a linear actuator, the reservoir piston comprising:

a first member adapted to be slidably mounted within the reservoir and adapted to form a fluid-tight barrier within the reservoir;

the first member having an external proximate side and an external distal side, the external proximate side being adapted to contact the fluid and being made of a material having a first stiffness;

a second member having a first side and a second side, the second member being disposed within the first member; and

the first side of the second member being adjacent to the external proximate side of the first member and being made of a material having a stiffness which is greater than the first stiffness;

rotating a motor drive shaft; and

linearly actuating the reservoir piston along the piston axis of travel using the linear actuator in response to rotation of the motor drive shaft to dispense the fluid from the reservoir.

26. (Withdrawn) The method of claim 25 wherein the second member first side is in a generally parallel, spaced-apart relationship with the first member external proximate side.

27. (Withdrawn) The method of claim 25 wherein the material of the first member external proximate side has a thickness defined by the distance between the first member external proximate side and the second member first side, and wherein the thickness is generally uniform.

28. (Withdrawn) The method of claim 25 wherein the first member external proximate side is made of rubber and the second member first side is made of one of stainless steel and plastic.

29. (Withdrawn) The method of claim 25 wherein the reservoir is adapted for use with a pump drive system having a linear actuation member, and wherein the piston first member is adapted to be releasably coupled to the linear actuation member.

30. (Withdrawn) The method of claim 29 wherein the linear actuation member includes a first threaded member and the piston first member includes a second threaded member adapted to engage the first threaded member.

31. (Withdrawn) The method of claim 30 wherein the first threaded member comprises a screw extending from the linear actuation member and having external threads, and the second threaded member comprises a cavity defined by the first member and having internal threads positioned to be engaged by the screw external threads.

32. (Withdrawn) The method of claim 31 wherein the external threads of the screw are made of a material having a first hardness and the internal threads of the first member cavity are made of a material having a second hardness.

33. (Withdrawn) The method of claim 31 wherein the external threads of the screw have a first lead and wherein the internal threads of the first member cavity have a second lead.



34. (Currently Amended) A piston for a reservoir adapted to contain a fluid and adapted for use with a drive system having a threaded linear actuation member, the piston comprising:

a first member adapted to be slidably mounted within the reservoir and adapted to form a fluid-tight barrier within the reservoir;

the first member having an external proximate side and an external distal side, the external proximate side being adapted to contact the fluid and being made of a material having a first stiffness, and the external distal side ~~being~~ including threads adapted to releasably engage the threaded linear actuation member; and  
a second member having a first side and a second side, the first side and the second side of the second member being adapted to be entirely contained within the first member and not to contact the fluid, and the second member being adjacent to the external proximate side of the first member for providing a second stiffness to the external proximate side, the second stiffness being greater than the first stiffness.

35. (Canceled)

36. (Previously Presented) The piston of claim 34 wherein the external proximate side of the first member is generally conical in shape.

37. (Withdrawn) A method of coupling an actuator to a reservoir piston, comprising:  
providing electrical power to a pump motor which is operably coupled to a plunger slide, the power being provided when the plunger slide is in a position other than fully inserted in a reservoir piston cavity;  
measuring a first value corresponding to the axial force on the plunger slide;  
determining whether the first value exceeds a second value corresponding to the axial force on the plunger slide when the plunger slide is fully inserted in the piston cavity; and  
terminating electrical power to the pump motor after determining that the first value exceeds the second value.